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Alcohol and intimate partner violence: do we have enough information to act?

D. Gil-González[1], C. Vives-Cases[1,2], C. Álvarez-Dardet[1,2], J. Latour-Pérez[1]

Background: Male alcohol consumption is one of the accepted risk factors for intimate partner violence. The aim of this study is to assess the magnitude of the association between male alcohol consumption and intimate partner violence against women and the quality of the evidence of published papers exploring this relationship empirically. **Methods:** Systematic review and meta-analysis of quantitative studies (1966–2004). Eight databases from Social and Behavioural Sciences, Clinical Medicine, and Life Sciences were reviewed. Studies with available 2 × 2 table or odds ratio were analysed using meta-analytic techniques. **Results:** A total of 22 studies fulfilled the inclusion criteria for the systematic review: 14 (63.6%) were cross-sectional studies, 6 (27.3%) case–series, 2 (9.1%) case–control studies. Ten studies analysed the relationship between alcohol and violence as their primary hypothesis and only two used a direct measure of alcohol consumption. Of them, 11 papers were included in the meta-analysis. The overall pooled odds ratio was 4.57 (95% confidence limits 3.30–6.35), but a high degree of heterogeneity was observed. The magnitude of the effect was inversely associated with the year of publication. The biggest odds ratios were obtained in the studies with the smallest sample sizes. **Conclusions:** The evidence about the relationship between alcohol consumption and intimate partner violence is of low quality in the study designs and maybe biased by publication of positive results. Currently there is not enough empirical evidence to support preventive policies based on male alcohol consumption as a risk factor in the particular case of intimate partner violence.

Keywords: alcohol, intimate partner violence, risk factor

Male alcohol consumption is one of the accepted risk factors for intimate partner violence.[1,2] The scientific literature often supports this association, not only considering that alcohol use in males plays an important role in the occurrence of intimate partner violence,[3,4] but also promoting rehabilitation programmes addressed to ameliorate this problem.[5–7] Male alcohol consumption has also been integrated in the most accepted causal models as a causal risk factor.[8–10] In addition, some countries take into account alcohol rehabilitation in their policies against gender violence.[11,12]

Despite its general acceptance, the causal relationship between male alcohol consumption and intimate partner violence remains controversial.[13–15] Systematic review and meta-analysis could be of some value to assess the available empirical evidence about this issue and to shed some light on its controversial nature. An evidence-based approach could provide valuable information for the development of preventive policies based on the relationship between male alcohol consumption and intimate partner violence.[16–19]

In the present study, a systematic review and meta-analysis were performed to assess the magnitude of the association between male alcohol consumption and intimate partner violence against women and the quality of the evidence of those published papers which explore this relationship empirically.

[1] Preventive Medicine and Public Health Area. Department of Community Nursing, Preventive Medicine and Public Health and History of Science, University of Alicante, Spain

[2] Network for Research on Gender and Health (RISG), Spain

Correspondence: Diana Gil-González, Área de Medicina Preventiva y Salud Pública, Departamento de Enfermería Comunitaria, Medicina Preventiva y Salud Pública e Historia de la Ciencia. Edificio de Ciencias Sociales, Campus Sant Vicent del Raspeig, Ap. 99. 03080 Universidad de Alicante, Alicante, Spain, tel: +34965909679, fax: +34965903964, e-mail: Diana.Gil@ua.es

Methods

The fields of Social and Behavioural Sciences, Clinical Medicine, and Life Sciences were searched from 2 April to 5 April, 2004, using the following data bases: ISI Current Contents (1995–March 2004), Medline (1966–March 2004), CINAHL (1982–January 2004), Psycinfo (1966–January 2004), Econlit (1969–February 2004), Francis (1984–November 2003), Sociological Abstracts (1986–March 2004), and Eric (1966–March 2004).

The keywords used were as follows: battered women and alcohol, violence against women and alcohol, domestic violence and alcohol, gender-based violence and alcohol, and gender violence and alcohol. From the identified papers, the quantitative empirical ones analysing the causal relationship between male alcohol consumption and physical intimate partner violence were selected for the systematic review.

Next, the selected studies were codified independently by two authors (C.V. and D.G.), using an *ad hoc* developed checklist. This checklist was made up of the following variables: degree of alcohol consumption (codified as 'chronic', 'acute intoxication', 'not specified'), how alcohol consumption was measured (codified as 'in batterers blood', 'by a third person', and 'no specified'), epidemiological design used (cohort, case–control, cross-sectional, ecological, case–series study), and sampling method (intentional, random, stratified, and no sampling); control of confounding variables; and, possible biases within the studies (selection, misclassification, and confounding) following the operative definitions given by Last in his *Dictionary of epidemiology* (4th edition).[20]

Since the present study aimed at assessing the magnitude of the association between male alcohol consumption and intimate partner violence, a descriptive statistical analysis was performed with the included papers, using SPSS-11 and Excel-2000 commercial software. Additionally, those studies from the systematic review that calculated crude odds ratio or had available 2 × 2 tables were analysed using meta-analytic techniques with Stats Direct v 4.1.[21] In some studies, tables that only

provided summary statistics could not be reconstructed. In order to include this information, a summary random effect meta-analysis was performed. On the one hand, the heterogeneity between studies was assessed graphically using the funnel plot (figure 1) of the standard error versus the observed effect. On the other hand, the relationship between the observed odds ratio and the study's year of publication was also examined through the forest plot (figure 2). Lastly, in order to further measure the degree of the possible association between the variables' year of publication and odds ratio of the studies, a Spearman's rank correlation was also calculated.

Results

In this study, 1035 papers were identified for potential inclusion: 336 papers through the 'battered women and alcohol' keywords, 283 through 'violence against women and alcohol', and finally 416 through the 'domestic violence and alcohol' keywords. No papers were found when using the keywords 'gender-based violence and alcohol' and 'gender violence and alcohol'. A total of 1013 of the studies (98%) were excluded, since the majority of them focused on other victims of violence, such as children, older people, and men ($n = 580$, 57.1%), while others consisted of intervention programme evaluations ($n = 113$, 11.2%) instead of the problem of violence against women. In addition, theoretical reviews, book reviews, editorials, qualitative studies, and summary of conferences were excluded. Table 1 outlines the reasoning behind this exclusion.

Systematic review

Only 22 of the studies published from 1996 to 2003 were included for the systematic review.[22–43] All of them were related with physical intimate partner violence. 12 of them (54.5%)[23–26,31–37,39] did not analyse the relationship between alcohol and violence as their primary hypothesis. Moreover, only 2 (9.1%) of the 22 studies[33,41] made use of a direct measure of male alcohol consumption.

As for the epidemiological design of the papers, 14 (63.6%) of the selected studies consisted of a cross-sectional design,[24,25,27,30,32,33,35–37,39,40–43] 6 (27.3%) were case–series,[23,28,29,31,34,38] and 2 (9.1%) were case–control studies.[22,26] No cohort studies were found. Besides, intentional sampling was used in 13 (59%) studies,[22,26–28,29–33,36,38,39,41,43] random sampling in 8 (36.6%) studies,[23–25,27,34,37,40,42] and stratified sampling in 1 paper[35] (4.5%).

As far as possible biases are concerned, all the papers specified clearly their exclusion and inclusion criteria. Also, the authors of the papers stated that confusion variables were controlled in 15 (68.2%) of the studies.[22–27,30,35–37,39,40–43] A potential selection bias could not be identified in 19 (86.4%) studies.[22–28,30–37,39–41,43] And no evidence of a potential misclassification bias of the outcome was found in 18 (81.8%) of the studies.[22,24–32,35–41,43] Nonetheless, a potential misclassification bias in the exposure was observed in 15 (68.2%) of the studies.[22–30,32,34,35,38,39,42]

Meta-analysis

Table 2 outlines the most important features of the 11 studies included in the meta-analysis.[22,24–26,30,33,35–37,39,40] An analysis of the role of male alcohol consumption as a predictive or determinant factor of intimate partner violence was found in all of them, of which two were case–control[22,26] studies and nine were cross-sectional[24,25,30,33,35–37,39,40] studies.

All of the studies which considered the causal association between male alcohol consumption and intimate partner violence showed a statistically significant risk excess. Nonetheless a high degree of heterogeneity regarding their most important features was observed (figure 1).

The relationship between odds ratio and the year of publication of the studies was also analysed. It could be observed that the different odds ratio decreased over time (figure 2). Thus, studies with bigger odds ratio and with broad confidence intervals were published in 1996 and 1998.[30,22] In after years, the odds ratios decreased and smaller values could be found. For instance, the most recent study's[38] (2003) odds ratio has a value near to the combined odds ratio, and is lower in comparison with the odds ratio of the oldest study analysed[30] (1996).

Lastly, a possible relationship between the sample size of the studies and their odds ratio was also assessed. A smaller odds ratio (figure 2) was observed in studies with big samples; while

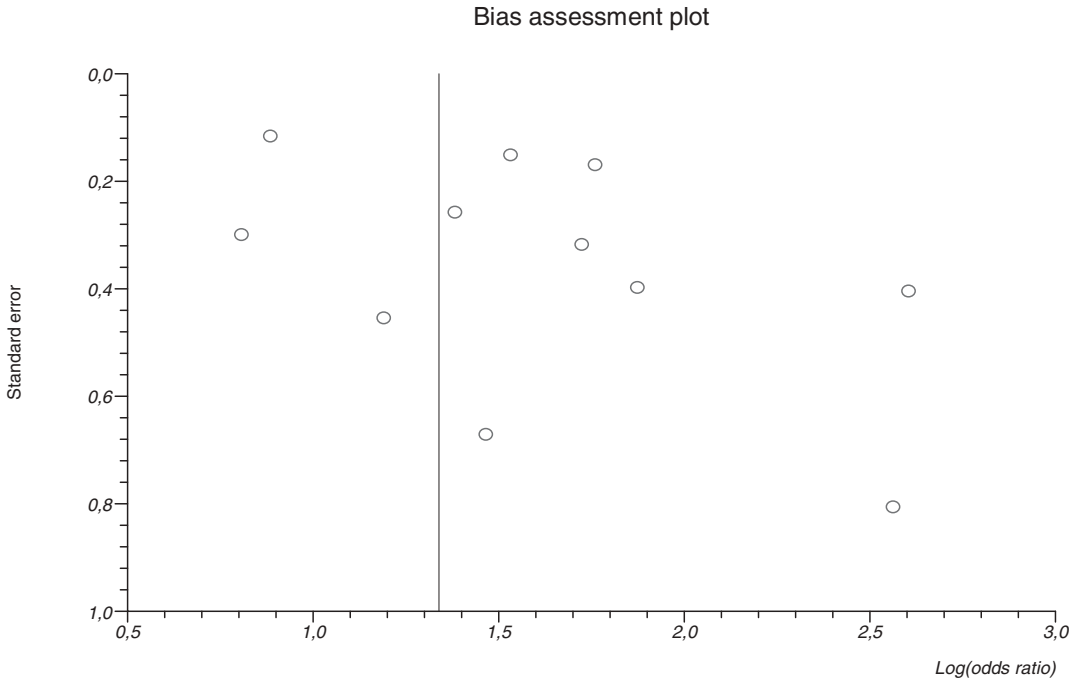

Figure 1 Heterogeneity between studies (1996–2003) included in the meta-analysis about male alcohol consumption and intimate partner violence

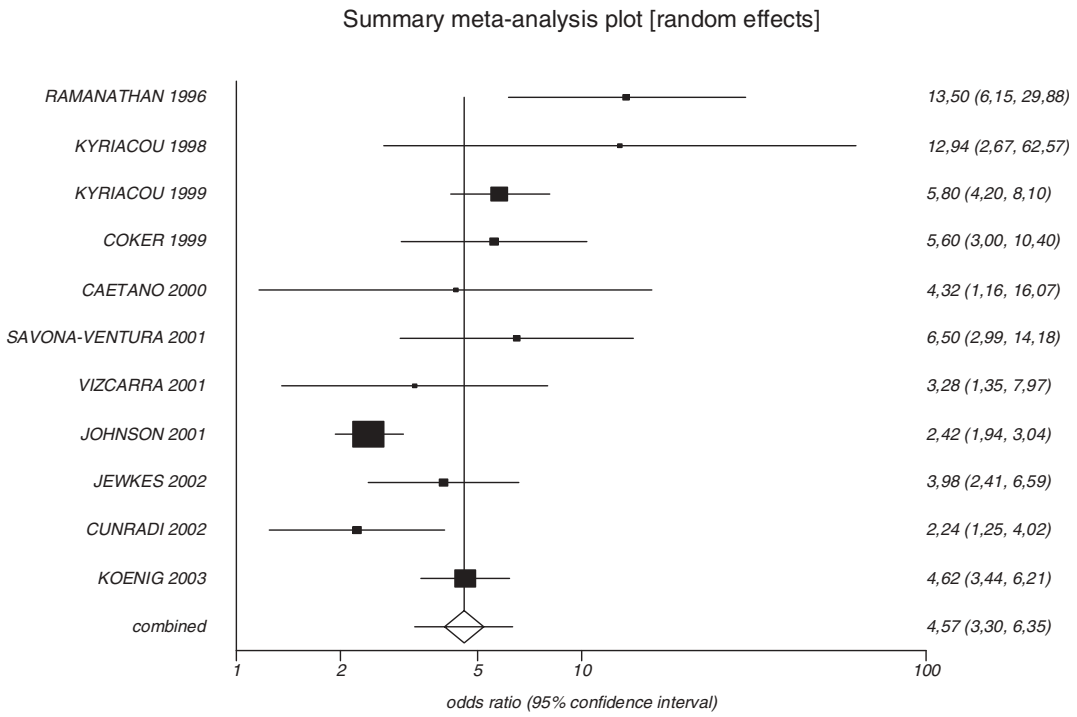

Figure 2 Relationship between the observed odds ratio and the year of publication of the studies (1996–2003) included in the meta-analysis about male alcohol consumption and intimate partner violence

Table 1 Excluded papers for the systematic review

Exclusion criteria	*N* excluded	% Out of total
Other victims	580	57.1
Intervention programme evaluation	113	11.2
Alcohol consumption by the victim	98	9.7
Other risk factors	74	7.3
Another type of violence (no IPV[a])	66	6.5
Qualitative studies	28	2.8
Theoretical reviews	24	2.4
Book reviews	9	0.9
Editorials	6	0.6
Summary of conferences	6	0.6
Violence from women against men	5	0.5
Lack of ethics[b]	3	0.3
Meta-analysis	1	0.1
Total excluded papers	1013	100

a: Intimate partner violence
b: Clinical trials with men

the highest odds ratio were identified in studies with smaller sample sizes and broader confidence intervals.

Spearman's rank correlation

The Spearman's rank correlation between the year of publication and odds ratio obtained a value $r_s = 0.782$ ($P < 0.05$).[44]

Discussion

Evidence linking male alcohol consumption to violence against women is not strong enough. The lack of designs with enough inferential power (e.g. cohort studies) and the possibility of a publication bias stand in its way. Consequently, decisions on the development of male rehabilitation programmes as a result of intimate partner violence prevention policies are not evidence-based. Therefore, a better understanding about the causes of the problem is crucial for the effectiveness of the policy. New studies are urgently needed to explore the empirical evidence of the relationship between intimate partner violence and other risk factors.[16–19]

Because grey literature has not been searched in this study and it is widely known that policy-makers make use of this information when designing their action programmes, this fact might be regarded as a limitation on the present study. The different cultural and political contexts of the countries where the intimate partner violence is studied in the papers reviewed, the number of these finally included in the meta-analysis, their heterogeneity, and their low quality seriously damages the credibility of the pooled odds ratio. In this respect, publication biases are probably one of the main sources of heterogeneity. The first two papers published on this subject (1996 and 1998)[22,30] highlighted a strong association between alcohol and violence. Then, the large studies suggested weak associations compared with the strong associations proposed by smaller studies. For example, one of the highest odds ratios found (12.94) was obtained by one of the smaller samples (46 people).[22]

As stated in the introduction to this paper, the treatments and the efficacy of the preventive programmes developed by public institutions are often based on the scientific evidence. For this reason, the possibility of a publication bias suggested in this study could be specially relevant, since a low validity of study findings usually precludes the institutional and financial efforts to ameliorate the problem of intimate partner violence against women.[45–47] This finding has also been observed in other meta-analysis studies on other fields of knowledge (e.g. genetics).[48,49]

Table 2 Characteristics of the studies included in the meta-analysis

First author (Reference)	Year of publication	Objective	Sample size	Population	Country of study	Design	Measure of violence	Measure of alcohol	Odds ratio/(IC)
Ramanathan (30)	1996	To assess the nature and consequences of violence against women	332	Women attending by psychiatric clinic	India	Cross-sectional	Survey (abuse and type of emotional problems)	Survey (abuse and type of emotional problems)	13.5 (6.15–29.88)
Kyriacou (22)	1998	To evaluate the associations between selected socioeconomic risk factors and acute injury from domestic violence against women	46	Group of injured woman (cases), group of women from an emergency department (control)	USA	Case–control	Items in Structured Interview	Items in Structured Interview	12.94 (2.67–62.57)
Kyriacou (26)	1999	To examine the socioeconomic and behavioural characteristics of women and their male partners to identify risk factors for injury to women as a result of domestic violence	915	Group of injured woman (cases), group of women from an emergency department (control)	USA	Case–control	Results of base-line characteristics of women	Results of base-line characteristics of women	5.8 (4.2–8.1)
Coker (39)	2000	To estimate the frequency and correlates of IPV by type (physical, sexual, battering, or emotional abuse) among women seeking primary health care	1401	Women aged 18–65 years who attended family practice clinics	USA	Cross-sectional	Index of Spouse Abuse and Women's Experience Battering Scale	Information self-reported by women in the survey	5.6 (3–10.4)
Vizcarra (25)	2001	To determine the prevalence of family violence against women in a population sample of Temuco, Chile	422	Women aged 15–49 years, low socioeconomic level, one or more child	Chile	Cross-sectional	Scale of 12 items	Alcohol Scale (EBBA)	3.28 (1.35–7.97)
Johnson (40)	2001	To investigate the importance of alcohol abuse as a predictive factor in cases of wife assault relative to other socio demographic and attitudinal factors using a nationally representative survey on violence against women conducted in Canada in 1993	12 300	Women 18 years of age and older	Canada	Cross-sectional	Survey by responses to a list of 10 behavioural items	Items in the same survey	2.42 (1.94–3.04)

Table 2 (*Continued*)

First author (Reference)	Year of publication	Objective	Sample size	Population	Country of study	Design	Measure of violence	Measure of alcohol	Odds ratio/(IC)
Savona-ventura (35)	2001	To identify the domestic violence problem in the pregnant population and its effects on pregnancy	405	Women unaware of the domestic violence services	Malta	Cross-sectional	Structured interviews	Structured interviews	6.51 (2.99–14.18)
Jewkes (24)	2002	To measure the prevalence of physical, sexual, and emotional abuse of women, to identify risk factors and associated health problems and health service use	1306	Central statistics for the 1998 South African Demographic and Health Survey (SADHS)	South Africa	Cross-sectional	Items in Structured Interview	Items in Structured Interview	3.98 (2.41–6.59)
Cunradi (36)	2002	To assess IPV rates by level of denominational homogamy, affiliative status, frequency of religious attendance, and importance of religion and to analyse the contribution of these factors to the risk of I	1440	Married couples interviewed for the 1995 National Study of Couples	USA	Cross-sectional	Conflict Tactics Scale	National Alcohol Survey	2.24 (1.25–4.02)
Koenig (37)	2003	To examine the specific socio demographic and behavioural risk factors associated with recent domestic violence and the attitudes of male and female respondents toward the circumstances under which such violence is justifiable	5109	Women with experience of intimate partner violence	Uganda	Cross-sectional	Survey adapted from Conflicts Tactics Scale	Information self-reported by women	4.62 (3.44–6.21)
Caetano (33)	2003	To estimate the prevalence rates of IPV among white, black, and Hispanic couples in the US and to assess the contribution of drinking pattern	1440	White, Black and Hispanic couples	USA	Cross-sectional	Conflict Tactics Scale	National Alcohol Survey	4.32 (1.16–16.07)

It is mentioned that the possible bias and the size of the study reduce drastically the credibility of the associations. Statistical approaches of the studies found in databases are not adequate to analyse the causal influence. Besides, studies which cannot establish strong associations are not often published, hence they are difficult to locate.

The political implications of these findings are crucial for clinicians and policy-makers. The role of substance consumption such as alcohol and its effect upon the occurrence of intimate partner violence are widely accepted in scientific literature.[50–52] However, now we know that the evidence in support of this statement is weak. As a result, when treating people with alcohol problems clinicians should not forget that on doing so maybe they are not solving the social problem of intimate partner violence.

In order to determine any real association between male alcohol consumption and intimate partner violence more case–control and cohort studies are necessary. Case–series, though, should be excluded because of their low inferential power. Lastly, current information about this issue should also be carefully re-examined before it is put into practice.

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Key points

- Systematic review and meta-analysis were performed to assess the magnitude of the association between male alcohol consumption and intimate partner violence.
- Evidence linking male alcohol consumption and violence against women is weak.
- There is not enough evidence to support preventive policies based on male alcohol consumption as a risk factor of intimate partner violence.
- When treating alcoholism, clinicians should not forget that maybe they are not solving the social problem of intimate partner violence.

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